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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/561,421

12/19/2005

Kiyoshi Arita

39102

6392

52054 7590 08/21/2009

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EXAMINER

LUND, JEFFRIE ROBERT

ART UNIT

PAPER NUMBER

1792

NOTIFICATION DATE

DELIVERY MODE

08/21/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patdocket@pearne.com  
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<b>Office Action Summary</b>	<b>Application No.</b> 10/561,421	<b>Applicant(s)</b> ARITA ET AL.	
	<b>Examiner</b> Jeffrie R. Lund	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

1. In view of the Reply Brief filed on May 22, 2009, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Parviz Hassanzadeh/

Supervisory Patent Examiner, Art Unit 1792

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

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applicant regards as the invention.

Claim 1 and 9 contain the limitation "can handle at least two wafers, a large wafer and small wafer" it is not clear if the processing apparatus handles two wafers at the same time i.e. "can handle at least two wafers, a large wafer and a small wafer" or if the apparatus can handle different size wafers one wafer at a time.

Claim 1 and 9 contain the limitation "like a ring", the phrase "like a ring" renders the claims indefinite because it is not clear if the first insulating area, second area, and second insulating area are a ring or not.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-6 and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable

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over Watanabe et al. (US 5,625,526) in view of Barnes et al. (US 5,670,066), Ito et al. (US 6,815,646 B2), Zhao et al. (US 5,589,003) and Mulligan et al. (US 6,164,633).

Watanabe teaches:

i. A plasma processing apparatus (Fig. 31), comprising: an integrally formed electrode member (520), which is located in a process chamber (504) that defines a closed space; a pressure reduction unit (526, 529), for discharging a gas from the closed space to reduce pressure; a gas supply unit (517), for supplying a plasma generation gas to the closed space in which the pressure has been reduced; an opposing electrode (518), positioned opposite the electrode member; a plasma generator (521), for applying a high frequency voltage between the electrode member and the opposing electrode to set the plasma generation gas into a plasma state; a cooling unit (524) for cooling the electrode member - in claims 1 and 9; a ceramic film (416) made of aluminum oxide on a surface of an electrode member (414) - in claims 6 and 13; and a polyimide resin film (417) on a surface of an electrode member (414) - in claims 11 and 12. (Figs. 27 and 31; Col. 18, lines 31-35; Col. 19, lines 43-64)

Watanabe does not teach:

i. An apparatus that can handle at least two wafers, a large wafer and a small wafer; the mounting face of the electrode member is divided into a first area, which is located in the center of the mounting face, wherein a metal, the material used for the electrode member, is exposed, a first insulating area, the surface of which is covered with an insulating film, that encloses, like a ring, the

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outer edge of the first area, a second area, wherein the metal is exposed, that is extended, like a ring, around the outer edge of the first insulating area, and a second insulating area, the surface of which is covered with an insulating film, that encloses, like a ring, the outer edge of the second area, wherein a boundary between the first area and the first insulating area is designated inside the outer edge of a small wafer positioned in the center of the mounting face, and a boundary between the first insulating area and the second area is designated outside the outer edge of the small wafer, and wherein a boundary between the second area and the second insulating area is designated inside the outer edge of a large wafer positioned in the center of the mounting face, and the second insulating area extends outward from the large wafer- in claims 1 and 9; a DC voltage application unit for applying a DC voltage to the electrode member to electrostatically attract the wafer positioned on the mounting face- in claims 1 and 9; a plurality of suction holes are formed in the first and the second areas and a vacuum suction unit is provided to create a vacuum and produce suction that, through the suction holes, draws the wafer to and holds the wafer on the mounting face - in claim 9; and wherein a cover member, which has a ring shape and which is detachable from the mounting face, is closely adhered across the entire face of the second area to completely cover all the suction holes formed in the second area - claim 2, in claim 9; the cover member, which has a resin layer deposited on its lower face, is attached to the mounting face when a small wafer is to be processed, or is removed from the mounting face when a large wafer is

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to be processed - claims 3 and 10, in claims 11 and 12; the cover member is made of ceramic - claim 4; and the cover member is formed of a thick outer ring and a thin internal ring that engages the thick outer ring - claim 5.

Mulligan teaches a vacuum chuck for a semiconductor processing apparatus comprising:

i. A mounting surface (28, 30) constructed to accommodate at least two different-sized wafers - in claims 1 and 9. (Figs. 1-3, Col. 4, lines 12-15)

Barnes teaches a plasma processing apparatus comprising:

i. The mounting face (36) of the electrode member (30) is divided into a first area (area surrounded by inner portion of 40), which is located in the center of the mounting face, wherein a metal, the material used for the electrode member, is exposed, a first insulating area (inner portion of 40), the surface of which is covered with an insulating film, that encloses, like a ring, the outer edge of the first area, and a second area (36), wherein the metal is exposed, that is extended, like a ring, around the outer edge of the first insulating area, and a second insulating area (44), the surface of which is covered with an insulating film, that encloses, like a ring, the outer edge of the second area, - in claims 1, 6, 9, and 13; and a DC voltage application unit 46 for applying a DC voltage to the electrode member to electrostatically attract the wafer positioned on the mounting face. (Fig. 1, Col. 3, lines 49-63)

Ito teaches components for a semiconductor manufacturing apparatus comprising:

i. A vacuum chuck (101, Fig. 5g) with a plurality of suction holes (8)

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formed in chuck body and a vacuum suction unit (not shown) is provided to create a vacuum and produce suction that, through the suction holes, draws the wafer to and holds the wafer on the mounting face - in claim 9. (Fig. 5, Col. 15, lines 32-37)

Zhao teaches a semiconductor processing apparatus comprising:

i. A cover member (12), which has a ring shape and which is detachable from the mounting face (16) - in claims 2 and 9; the cover member is made of ceramic (aluminum oxide) - claim 4, in claim 11; and the cover member is formed of a thick outer ring (24) and a thin internal ring (22) that engages the thick outer ring - claim 5, in claim 12. (Fig. 1; Col. 3, line 30 to Col. 4, line 53)

Applicant's claim requirements of "performs a plasma process for the reverse face of a wafer for which an insulating sheet is adhered to the obverse face" in claims 1 and 9, and "the cover member is attached to the mounting face when a small wafer is to be processed, or is removed from the mounting face when a large wafer is to be processed" in claims 3 and 10 are claim requirements of intended use in the pending apparatus claims that the apparatus of Watanabe, Mulligan, Barnes, Ito, and Zhao can perform. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter, 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is Capable of performing the intended use, then it meets the claim



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(In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963); MPEP 2111.02).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Watanabe with Mulligan's multiple size wafer support, Barnes' electrostatic chuck with annular insulating members, Ito's vacuum suction holes, and Zhao's substrate support cover for the modified apparatus of Watanabe, Mulligan, Barnes, Ito, and Zhao; it would also have been obvious to add the resin layer of Watanabe to the cover of Zhao; select the size of wafers to fit the modified apparatus, or optimize the dimensions of the modified apparatus to accommodate different-sized wafers; and optimize the dimensions of the modified apparatus so the support cover can shield the second area.

Motivation for adapting Mulligan's multiple size wafer support for the apparatus of Watanabe, Mulligan, Barnes, Ito, and Zhao is to eliminate the need for separate apparatuses when different-sized wafers are to be processed.

Motivation for combining Watanabe's ceramic film with Barnes' segmented electrostatic chuck for the apparatus of Watanabe, Mulligan, Barnes, Ito, and Zhao is to be able to isolate the object (wafer) supported on the surface of the face of a single electrode member.

Motivation for adding the DC voltage application unit of Barnes to the apparatus of Watanabe, Mulligan, Barnes, Ito, and Zhao is to apply a DC voltage to the electrostatic chuck of Barnes electrostatically attract the wafer positioned on the mounting face as taught by Barnes.

Motivation for adapting Ito's vacuum suction holes for the apparatus of Watanabe, Mulligan, Barnes, Ito, and Zhao is to attract the wafer to the support through vacuum force.

Motivation for adapting Zhao's substrate support cover for the modified apparatus of Watanabe, Mulligan, Barnes, Ito, and Zhao is to protect the unused portion of the substrate support from plasma damage.

Motivation for adding Watanabe's resin layer to Zhao's cover member is to provide an alternate placement for the resin layer. Further, it is well established that the rearrangement of parts is considered obvious to those of ordinary skill (In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950); In re Kuhle, 526 F.2d 553, 188 USPQ 7 (CCPA 1975); Ex parte Chicago Rawhide Manufacturing Co., 223 USPQ 351,353 (Bd. Pat. App. & Inter. 1984); MPEP 2144.04)

Motivation for selecting the size of wafers to fit the modified apparatus, or optimizing the dimensions of the modified apparatus to accommodate different-sized wafers is to eliminate the need for multiple apparatuses for processing different-sized wafers. Further; it is well established that changes in apparatus dimensions are within the level of ordinary skill in the art. (Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); See MPEP 2144.04)

Motivation for optimizing the dimensions of the modified apparatus of Watanabe, Mulligan, Barnes, Ito, and Zhao so the support cover can shield the second area is to

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protect the second area from plasma damage and prevent plasma from being vacuumed through the suction holes. Further, it is well established that changes in apparatus dimensions are within the level of ordinary skill in the art. (Gardner V. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); See MPEP 2144.04)

7. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (US 5,625,526) in view of Barnes et al. (US 5,670,066), Ito et al. (US 6,815,646 B2), Zhao et al. (US 5,589,003) and Mulligan et al. (US 6,164,633) as applied to claims 1-6 and 9-13 above, and further in view of Garabedian et al. (US 2002/0179246 A1) and Sago et al. (US 2003/0198005 A1).

Watanabe, Barnes, Ito, Zhao, and Mulligan do not teach:

- i. A blocking member, having a ring shape, that is attached to the second area, when the cover member is mounted on the mounting face, to block the plurality of suction holes in the second area, wherein the cover member completely covers the blocking member - in claim 7.

- ii. The blocking member is formed by adhering, to one face of a ring-shaped plate made of the same material as the wafer, an insulating sheet made of the same material as the insulating sheet that is adhered to the wafer - claim 8.

Garabedian teaches a plasma processing apparatus comprising:

- i. A lower ring-shaped member (lower ring 22) covered by an upper ring-

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shaped member (upper ring 22), wherein both members are disposed on top of a substrate support (9) as plasma shields - in claim 7. (Fig. 6, Para. 39 and 44)

Sago teaches a substrate processing apparatus comprising:

i. A correction ring (46) disposed around a substrate (9), and the ring is made of the same material as the substrate - in claim 8. (Fig. 3, Para. 38)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the two-ring shield concept of Garabedian for the apparatus of Watanabe, Mulligan, Barnes, Ito, and Zhao; and construct the lower shield with the same material as the substrate as taught by Sago. It would also have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the dimensions of the shields to cover the second area, and mimic the substrate exactly by including an insulation sheet.

Motivation for adapting the two-ring shield of Garabedian for the apparatus of Watanabe, Mulligan, Barnes, Ito, and Zhao; and constructing the lower shield with the same material as the substrate as taught by Sago is to maintain protection from plasma damage as taught by Garabedian, while the modified lower ring prevents non-uniformity of the process at the edge of the substrate by keeping temperature uniform at the periphery of the substrate.

Motivation for optimizing the dimensions of the shields to cover the second area is to protect the unused portion of the substrate holder from damage by plasma.

Motivation for mimicking the substrate exactly by including an insulation sheet is to ensure heat transfer properties are identical in both the real substrate and the dummy

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substrate.

Applicant's claim requirement of "to block the plurality of suction holes in the second area" in claim 7 is a "claim requirement of intended use in the pending apparatus claim that the apparatus of Watanabe, Mulligan, Barnes, Ito, Zhao, Garabedian, and Sago can perform. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter, 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963); MPEP 2111.02).

8. Claims 1-6 and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwai et al, 2004/0050496 A1, in view of Zhao et al, 5,589,003, and Mulligan et al, 6,164,633.

Iwai et al teaches a plasma processing apparatus that includes: an integrally formed electrode member 3, which is located in a process chamber 2 that defines a closed space and which has a mounting face larger than a large wafer so that a wafer can be mounted while the insulating sheet 6a is contacting the mounting face; a pressure reduction unit 8, for discharging a gas from the closed space to reduce pressure; a gas supply unit 21, for supplying a plasma generation gas to the closed space in which the pressure has been reduced; an opposing electrode 4, positioned

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opposite the electrode member; a plasma generator 17, for applying a high frequency voltage between the electrode member and the opposing electrode to set the plasma generation gas into a plasma state; a DC voltage application unit 18, for applying a DC voltage to the electrode member to electrostatically attract the wafer positioned on the mounting face; a cooling unit 10 for cooling the electrode member; suction holes 3c formed in the first area and attached to a vacuum suction unit 12; the mounting face of the electrode member is divided into a first area (area C), which is located in the center of the mounting face, wherein a metal, the material used for the electrode member, is exposed; a first insulating area 3f (area B), the surface of which is covered with an insulating film of alumina, that encloses, like a ring, the outer edge of the first area, a first insulating area, the surface of which is covered with an insulating film, that encloses, like a ring, the outer edge of the first area, and a boundary between the first area and the first insulating area is designated inside the outer edge of a small wafer positioned in the center of the mounting face, and a boundary between the first insulating area.

Iwai et al differs from the present invention in that Iwai et al does not teach: a cover member, which has a ring shape and which is detachably covering outer portion of the mounting face, an inner diameter of the cover member being substantially equal to an outer diameter of the wafer placed on the mounting face, wherein said cover member completely covers the second area, wherein the cover member is attached to the mounting face when a small wafer is to be processed, or is removed from the mounting face when a large wafer is to be processed, and the cover member is made of

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ceramic; a second area, wherein the metal is exposed, that is extended, like a ring, around the outer edge of the first insulating area, and a second insulating area, the surface of which is covered with an insulating film, that encloses, like a ring, the outer edge of the second area, wherein a boundary between the second area and the second insulating area is designated inside the outer edge of a large wafer positioned in the center of the mounting face, and the second insulating area extends outward from the large wafer.

Zhao et al teaches a semiconductor processing apparatus comprising: a cover member 12, which has a ring shape and which is detachable from the mounting face 16; the cover member is made of ceramic (aluminum oxide) - claim 4, in claim 11; and the cover member is formed of a thick outer ring (24) and a thin internal ring (22) that engages the thick outer ring - claim 5, in claim 12. (Fig. 1; Col. 3, line 30 to Col. 4, line 53)

Mulligan teaches a vacuum chuck for a semiconductor processing apparatus comprising: a mounting surface (28, 30) constructed to accommodate at least two different-sized wafers - in claims 1 and 9. (Figs. 1-3, Col. 4, lines 12-15)

The motivation for adding the cover of Zhao et al to the apparatus of Iwai et al is to protect the exposed parts of the electrode member of Iwai et al as taught by Zhao et al.

The motivation for adding a second area and second insulating area is to enable the electrode member of Iwai to hold a large or small substrate as taught by Mulligan et al. Furthermore, it has been held in *In re Harza* (124 USPQ 378) that the duplication of

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parts is obvious. (See MPEP 2144)

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the cover of Zhao et al to the apparatus of Iwai et al, and to add a second area and second insulating area to the apparatus of Iwai et al as taught by Mulligan et al.

9. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

10. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwai et al, 2004/0050496 A1, in view of Zhao et al, 5,589,003, and Mulligan et al, 6,164,633, as applied to claims 1-6 and 9-13 above, and further in view of Garabedian et al, US 2002/0179246 A1, and Sago et al, US 2003/0198005 A1.

Iwai et al, Zhao et al, and Mulligan et al do not teach: a blocking member, having a ring shape, that is attached to the second area, when the cover member is mounted on the mounting face, to block the plurality of suction holes in the second area, wherein the cover member completely covers the blocking member, or that the blocking member is formed by adhering, to one face of a ring-shaped plate made of the same material as the wafer, an insulating sheet made of the same material as the insulating sheet that is adhered to the wafer .

Garabedian et al teaches a plasma processing apparatus comprising: a lower ring-shaped member (lower ring 22) covered by an upper ring-shaped member (upper ring 22), wherein both members are disposed on top of a substrate support (9) as



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plasma shields - in claim 7. (Fig. 6, Para. 39 and 44)

Sago et al teaches a substrate processing apparatus comprising: a correction ring (46) disposed around a substrate (9), and the ring is made of the same material as the substrate - in claim 8. (Fig. 3, Para. 38)

The motivation for adapting the two-ring shield of Garabedian for the apparatus of Iwai et al, Zhao et al, and Mulligan et al and constructing the lower shield with the same material as the substrate as taught by Sago is to maintain protection from plasma damage as taught by Garabedian, while the modified lower ring prevents non-uniformity of the process at the edge of the substrate by keeping temperature uniform at the periphery of the substrate.

The motivation for optimizing the dimensions of the shields to cover the second area is to protect the unused portion of the substrate holder from damage by plasma.

The motivation for mimicking the substrate exactly by including an insulation sheet is to ensure heat transfer properties are identical in both the real substrate and the dummy substrate.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the two-ring shield concept of Garabedian for the apparatus of Iwai et al, Zhao et al, and Mulligan et al; and construct the lower shield with the same material as the substrate as taught by Sago. It would also have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the dimensions of the shields to cover the second area, and mimic the substrate exactly by including an insulation sheet.

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11. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

### ***Response to Arguments***

12. Applicant's arguments, see paragraph III on page 6, filed May 22, 2009, with respect to the rejections of claims 1-13 under Watanabe, Barnes, Ito, Zhao, and Mulligan have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, new grounds of rejection are discussed above.

13. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

14. Applicant's arguments filed May 22, 2009 have been fully considered but they are not persuasive.

In regard to the arguments directed to Watanabe, Barnes, Ito, Zhao, and Mulligan, the Examiner disagrees. First, the open language of the claim does not limit or prevent any additional elements. Thus the claims do not limit or prevent a second element 38. Second, figure 1 of Barnes et al clearly shows insulating element 40 has an inner surface and outer surface that is even with the mounting surface of 34 which reads on the claimed invention.

### ***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art teaches the technological background of the

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invention.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrie R. Lund whose telephone number is (571) 272-1437. The examiner can normally be reached on Monday-Thursday (10:00 am - 9:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Parviz Hassanzadeh/  
Supervisory Patent Examiner, Art Unit 1792

/Jeffrie R. Lund/  
Primary Examiner  
Art Unit 1792

JRL  
8/15/09